

Coordination of Unlike Grammatical Functions

Agnieszka Patejuk^{1,2} and Adam Przepiórkowski^{1,3,4}

¹Institute of Computer Science, Polish Academy of Sciences

²Centre for Linguistics and Philology, University of Oxford

³Institute of Philosophy, University of Warsaw

⁴Wolfson College, University of Oxford

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Coordination



(Hudson 1984: 225):

“[W]e need to make sure that, in some sense, all the conjuncts in a coordinate structure have the same external relations... If we mix up conflicting external relations, the result is zeugma (e.g. *He came in { (a hurry) and (a taxi) }*), where the conjuncts require conflicting meanings of *in*, or **sheer incoherence** (e.g. *I ate potatoes and in the kitchen*).”

Coordinating different grammatical functions seems bad:

- *[[I] and [an apple]] have already eaten.
(intended: I have already eaten an apple.)
- *I have already eaten [[an apple] and [today]].
(intended: I have already eaten an apple today.)



(Hudson 1984: 225):

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Sheer incoherence?



There are attested good examples:

- [[**What**] and [**when**]] to eat to reduce insulin
- some were mentioned in dependency literature (Mel'čuk)
- but there is no in-depth discussion
- and no worked out dependency analysis

In this talk we will:

- present cases of coordination of different grammatical functions
- show it is true coordination, without ellipsis
- discuss challenges to dependency grammars
- propose a UD analysis

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Where does it occur?



- robust, widely attested:
 - Slavic:
 - Russian – first mentioned (Sannikov 1979, 1980)
 - **Polish**
 - Bulgarian
 - Croatian
 - Romanian
 - Hungarian
 - West Armenian
- restricted (only some GFs, only interrogative):
 - English
 - French
 - German
 - Dutch
 - Italian
 - Spanish
 - ...

Is it only about wh-words?



No, in Polish (and selected other languages):

- wh-words (~ *who, when*)
- free choice (~ *whoever, whenever*)
- universal quantifiers (~ *everybody, always*)
- n-words (~ *nobody, never*)
- and more:
 - demonstratives
 - indefinites (existential quantifiers)
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Wh-words



[[Co,] [komu] i [z czym]] się kojarzy, to jego
 what.NOM who.DAT and with what.INST REFL associate is POSS.GEN
 prywatna sprawa.
 own business

'Who associates what with what is their own business.' (NKJP)

- subject
- indirect object
- oblique

N-words



[[**Nic** i **nikogo**]] nie może tłumaczyć.
 nothing.NOM and nobody.GEN NEG can excuse.INF
 ‘Nothing may excuse anybody.’ (NKJP)

- subject (of *może*)
- direct object (of *tłumaczyć*)

Is this coordination?



- the joining element is a conjunction:
 - various conjunctions can be used:
 - AND/OR-type
 - preconjunctives (BOTH... AND...)
 - imposing special constraints
 - and only conjunctions
- more than two items can be joined

Is this ellipsis?



No, not ellipsis:

- [[Ile] i [kto]] rozwiązał zadań?
how many.ACC and who.NOM solved tasks.GEN
'How many tasks did who solve?'
- Ile rozwiązał zadań?
- *Kto rozwiązał zadań?
- Ile kto rozwiązał zadań?

Exception – czy 'if/whether':

- [[Czy] i [kto]] przyszedł?
whether and who.NOM came
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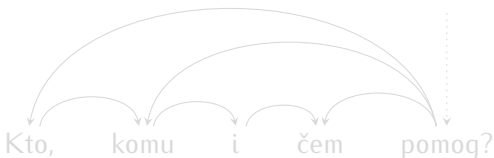
Previous dependency approaches 1



Hardly any discussion of such constructions in dependency literature (exceptions: Sannikov 1979, 1980 in Russian, Kallas 1993 in Polish).

- Kto, komu i čem pomog? (Russian)
who.NOM who.DAT and what.INS helped
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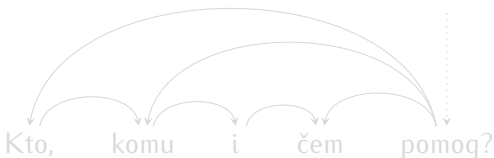
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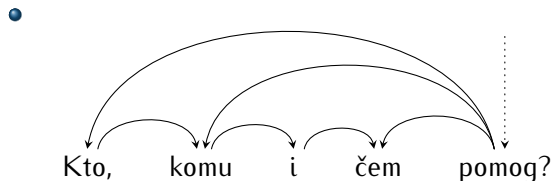
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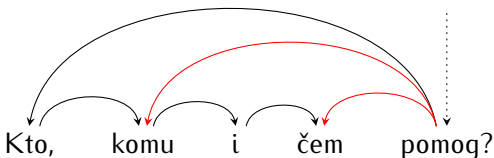
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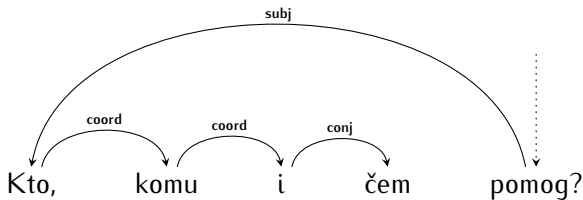


Previous dependency approaches 2



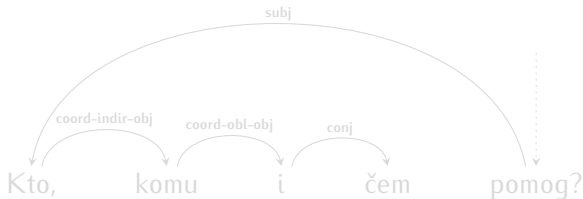
Mel'čuk 2009:

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misleading!

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adopted

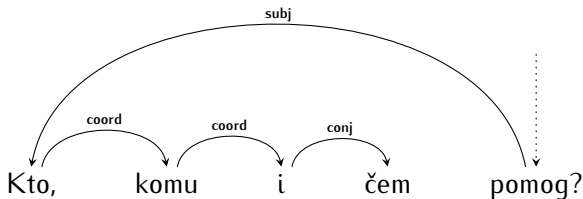
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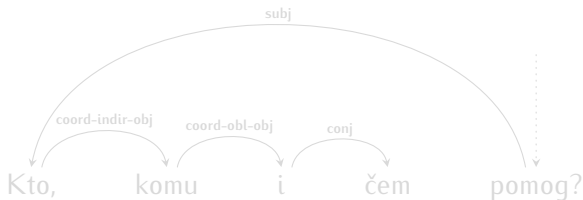
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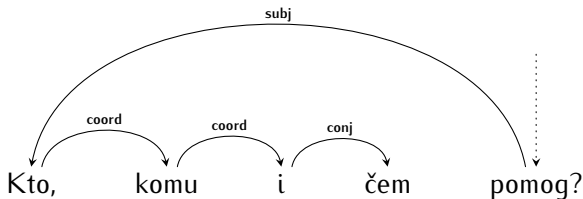


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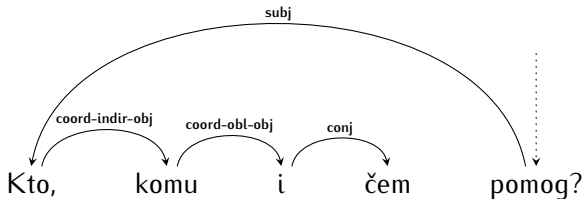
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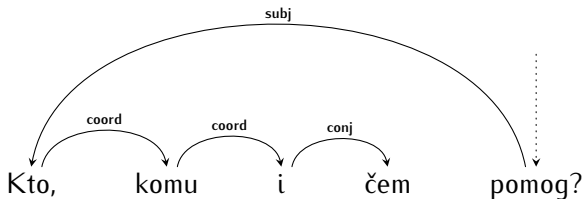
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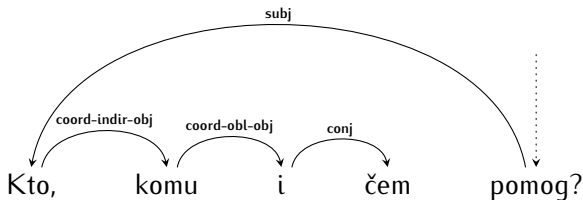
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Problems with the proposal of Mel'čuk 2009.

- instead of one **coord** relation, as many **coord-...** relations as grammatical functions,
- coordinated items may have **different heads**, so relations should also encode paths to heads – in(de)finitely many needed.

Consider:

- Nic i nikogo nie może tłumaczyć.
nothing.NOM and nobody.GEN NEG may excuse.INF
'Nothing may excuse anybody.'
- Jakie i kto może ponieść konsekwencje?
what.ADJ.ACC and who.NOM may bear.INF consequences.ACC
'Who may suffer what consequences?'
- Czego i ile trzeba dostarczyć organizmowi?
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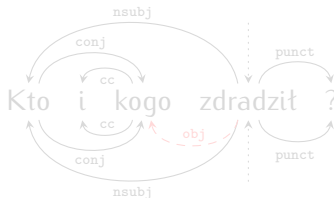
UD representations

1



- **[[Kto] i [kogo]] zdradził?**
who.NOM and who.ACC betrayed
'Who betrayed whom?'

Extrapolating UD guidelines:



First problem:

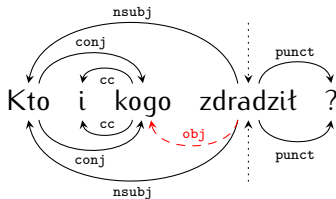
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UD representations 1



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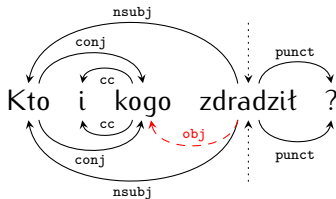
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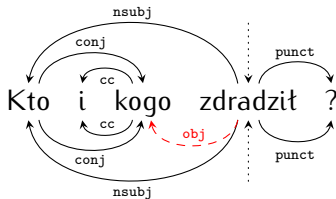
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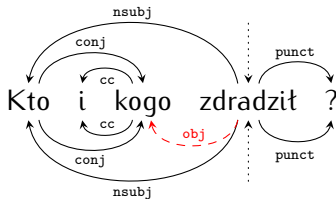
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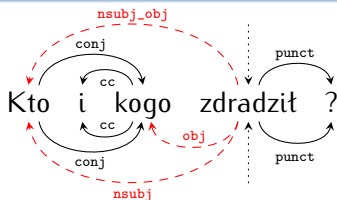
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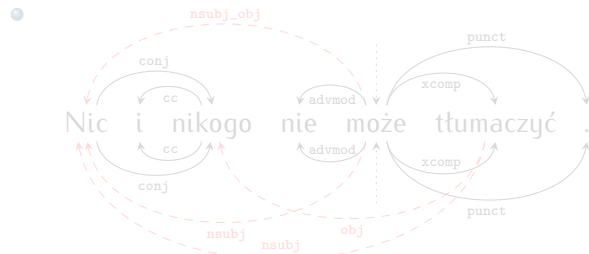
2

Another attempt:



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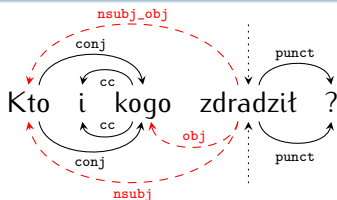


UD representations

2

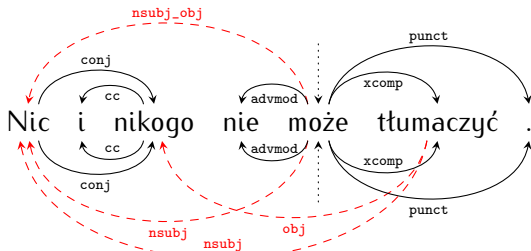


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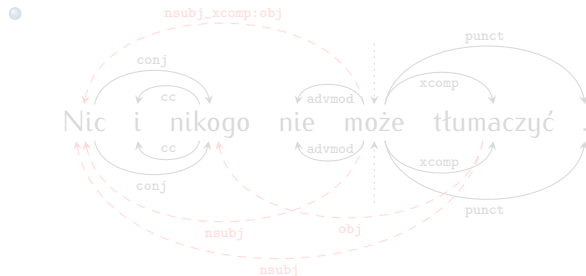
UD representations 3



Example repeated:

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Second problem: potentially in(de)finite number of labels.

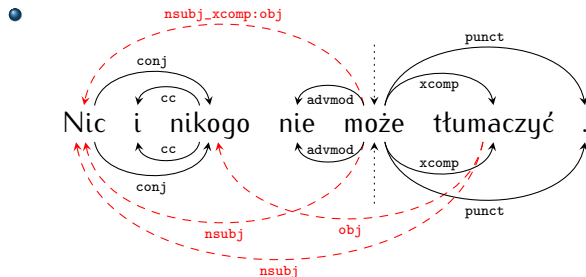
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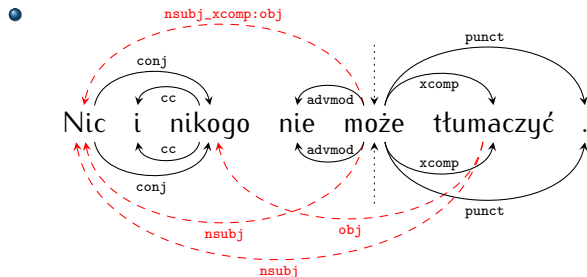
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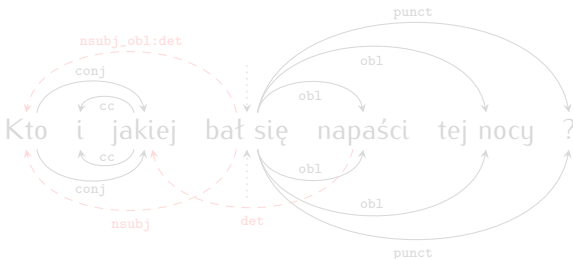
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This is still **not sufficient**; consider:

- **[[Kto] i [jakiej]] bał się napaści**
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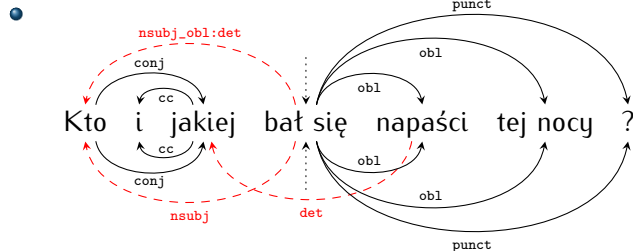
UD representations

4



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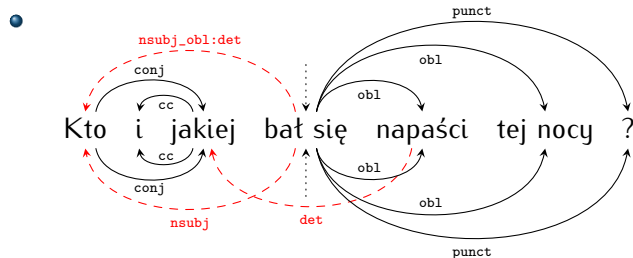
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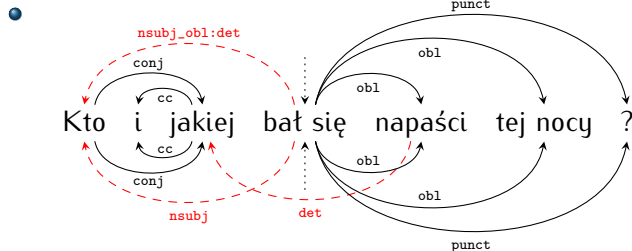
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Proposed UD representations 1



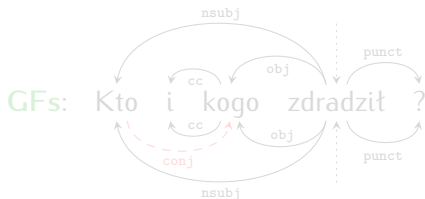
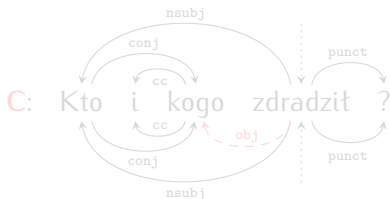
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Proposed UD representations 1



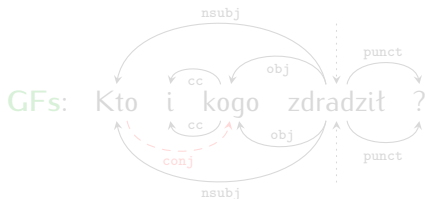
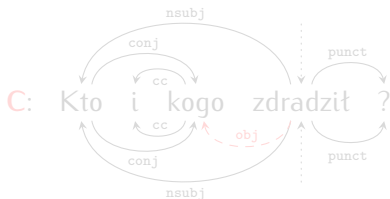
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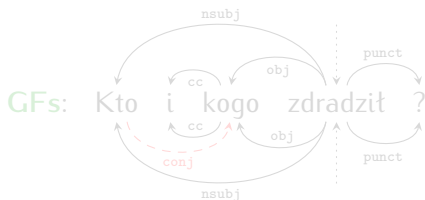
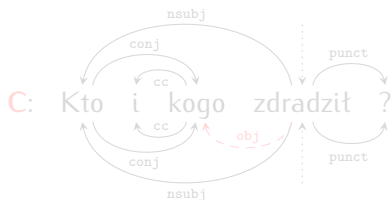
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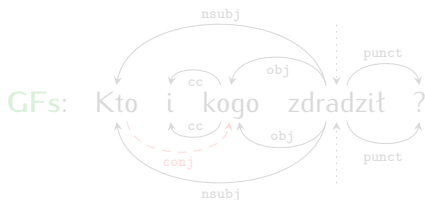
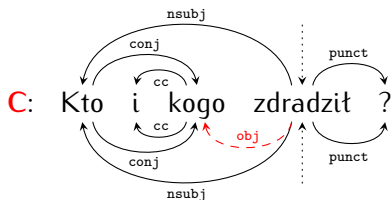
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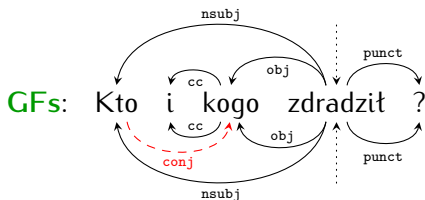
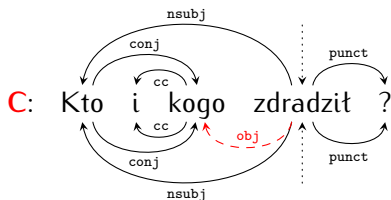
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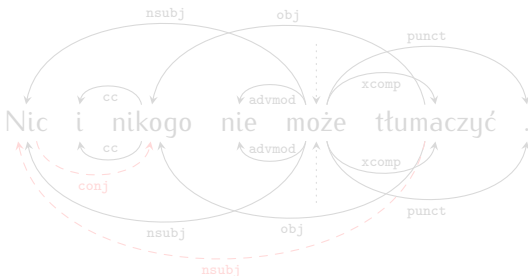
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Proposed UD representations 2



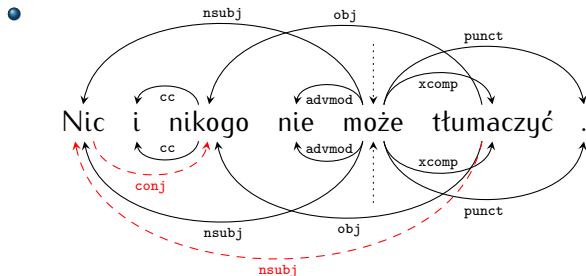
- $[[\text{Nic}]_{\text{nsubj}} \quad \text{i} \quad [\text{nikogo}]_{\text{obj}}] \text{ nie może tłumaczyć.}$
 nothing.NOM and nobody.GEN NEG may excuse.INF
 ‘Nothing may excuse anybody.’



Proposed UD representations 2



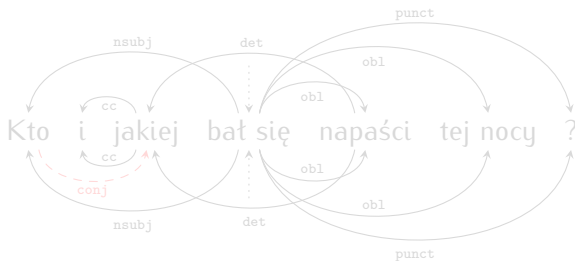
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Proposed UD representations 3



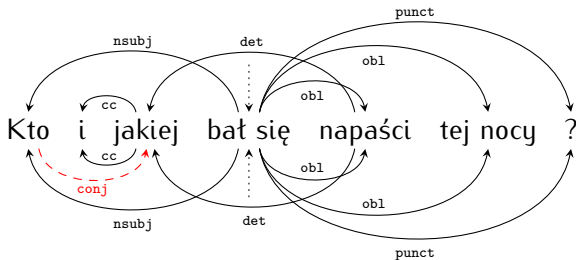
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Conclusion



- coordination of unlike GFs is attested, natural and robust
- possible approaches:
 - MTT: complicated labels
 - Prague: ellipsis (not discussed here)
 - UD default (basic trees):
 - representing coordination
 - at the cost of losing GFs of non-initial conjuncts
 - alternative: complicated labels (like MTT, same issues)
 - cannot represent numeral phrases (not discussed above)
 - UD proposed (basic trees):
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Thank you for your attention!

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Thank you for your attention!



Different conjunctions



...[[kto] **lub** [czego]] będzie w Wikipedii szukał.
 who.NOM or what.GEN will in Wikipedia seek
 ‘...who will seek what in Wikipedia.’ (NKJP)

...wyjawisz [**nie tylko** [kto], **ale i** [dlaczego]] otrzymał awans.
 disclose not only who.NOM but and why received promotion
 ‘...you explain not only who, but also why got promoted.’ (www)

Rząd USA *(nie) ujawnia, [[kogo] **ani** [dlaczego]] umieścił na liście...
 gov. USA NEG discloses who.ACC and why put on list
 ‘The US government does not disclose who and why they put on the list
 [of people who should not be allowed on board of planes.]’ (www)

More than two items



[[**Co,** [komu] i [z czym]] się kojarzy, to jego
 what.NOM who.DAT and with what.INST REFL associate is POSS.GEN

prywatna sprawa.

own business

'Who associates what with what is their own business.' (NKJP)

czy [[**komukolwiek**], [**kiedykolwiek**] i [**do czegokolwiek**]]
 PART anybody.DAT anytime and for anything

przydał się poradnik

come in handy guide

'Has a(ny) guide ever come in handy to anybody for anything?'

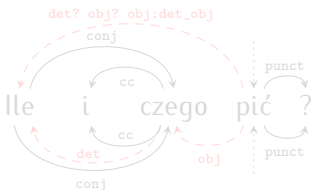
(NKJP)

Extra challenge: numeral phrases



Consider:

- $[[\text{Ile}]_{\text{det}} \quad \text{i} \quad [\text{czego}]_{\text{obj}}] \text{ pić}$ by trenować efektywnie?
 how much.ACC and what.GEN drink.INF to train.INF effectively
 'How much of what should one drink to exercise effectively?'



Problem:

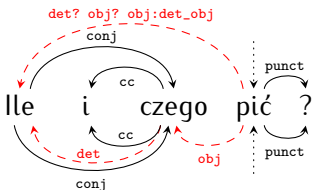
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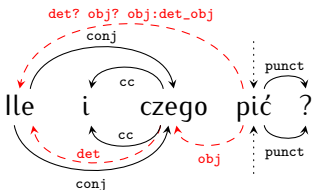
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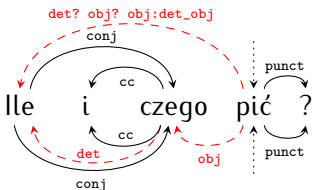
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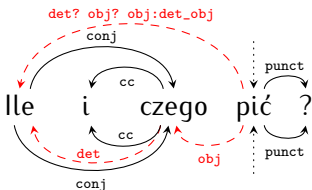
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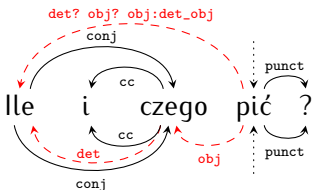
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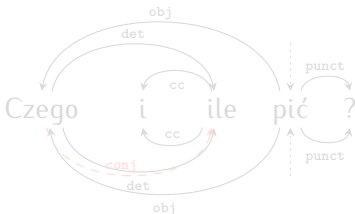
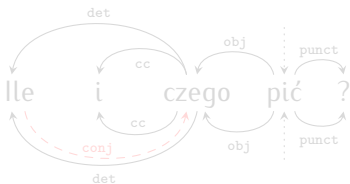
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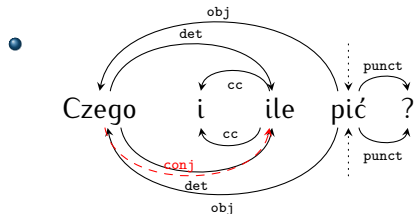
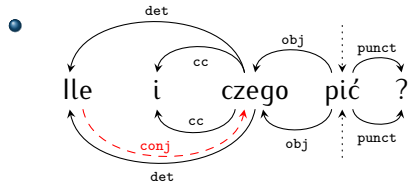
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